

DIYEV, N.P. [deceased]; PADUCHEV, V.V.; TOPOROVA, V.V.

Interaction of iron sulfides and sulfurous anhydride. Trudy Inst.
met. UFAN SSSR no.2:95-105 '58. (MIRA 12:4)
(Iron sulfides) (Sulfur dioxide)

PADUCHEV, V.V.; TOPOROVA, V.V.; DIYEV, N.P.

Reaction of lead sulfide with sulfur dioxide. Zhur.prikl.khim. 34
no.3:676-679 Mr '61. (MIRA 14:5)
(Lead sulfide) (Sulfur dioxide)

ACC NR: AP7000914

SOURCE CODE: UR/0318/66/000/011/0049/0049

AUTHOR: Shestakova, N. M.; Toporova, Z. P.

ORG: BASHNIINP

TITLE: Reagents for a rapid method of determination of barium and zinc in oil additives, or oils with additives

SOURCE: Neftepererabotka i neftekhimiya, no. 11, 1966, 49

TOPIC TAGS: lubricant additive, barium compound, zinc compound, analytic ~~determination~~ *chemistry*

ABSTRACT: The compositions and preparation of solutions for a rapid method of determination of zinc and barium in oil additives and in oils with additives are presented. The method was developed at the Bashkirian Scientific Research Institute of Petroleum Processing (BASHNIINP) and was reported previously (Neftepererabotka i neftekhimiya, no. 5, 1966). The preparation of the following solutions is given: 1) a standard solution of Trilon B [EDTA]; 2) a standard zinc solution; 3) buffer solution A of ammonium hydroxide and ammonium chloride with pH=10; 4) buffer solution B of the same reagents and with the same pH, but containing EDTA titrated magnesium chloride; 5) 20% solution of

Card 1/2

ACC NR: AP7000914

ammonium sulfate; 6) 3% solution of in addition, pure benzene and
butanol are mentioned. [WA-28]

SUB CODE: //, 07, 21/ SUBM DATE: none/ ORIG REF: 001

Card 2 / 2

ACC NR: AP7000914

SOURCE CODE: UR/0318/66/000/011/0049/0049

AUTHOR: Shestakova, N. M.; Toporova, Z. P.

ORG: BASHNIINP

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TOPIC TAGS: lubricant additive, barium compound, zinc compound, analytic ~~determination~~ *chemistry*

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Card 1/2

ACC NR: AP7000914

ammonium sulfate; 6) 3% solution of in addition, pure benzene and butanol are mentioned. [WA-28]

SUB CODE: //07, 21/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

DIYEV, N.P. [deceased]; MALAKHOV, A.Ye.; PADUCHEV, V.V.; TOPOROVA, Z.V.

Investigating shaft furnace smelting of Ural Mountain sulfide
copper ores. Trudy Inst.met.UFAN SSSR no.3:21-35 '59.
(MIRA 13:4)

(Ural Mountains--Copper ores)
(Smelting furnaces)

L 45722-66 EW (m)/E/EWP(L)/ET IP(L) D/DI
 ACC NR: AP6026499 (A) SOURCE CODE: UR/0318/66/000/005/0016/0018
 AUTHOR: Shestakova, N. M.; Toporova, Z. P.
 ORG: BashNIINP
 TITLE: Rapid method of determining barium and zinc in additives and oils with additives
 SOURCE: Neftepererabotka i neftekhimiya, no. 5, 1966, 16-18
 TOPIC TAGS: barium, zinc, calcium, quantitative analysis
 ABSTRACT: In order to simplify and accelerate the determination of barium and zinc in additives and oils containing additives, a cold extraction method was used to extract the metal-containing components; it consisted in agitating the benzene solution of the sample with HCl (manually or mechanically) for 15 min and washing twice with water. The metals were then determined by complexometric titration. The data showed a complete extraction of the metal-containing components. The procedures for determining barium in the absence of zinc and zinc and barium together are described. The method is rapid and does not require any complex equipment. It is thought to apply to calcium-containing products as well. Orig. art. has: 1 table.
 SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 002
 Card 1/1 ULR UDC: 665.637.6-4:546.431:543.06

Ca

29

PROCESSES AND PATENT INFORMATION

Synthetic tanning materials. Kh. S. Toporovskaya and P. S. Kononovlenko. Russ. 59,051, Feb. 28, 1941. A mixt. of sulfonated naphthalene and phenol is condensed with aldehyde, and the product heated with sulfite cellulose ext., and treated further with aldehyde.

ASB-55-A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SYNOPSIS AND PROPERTIES INDEX																									
COMMON ELEMENTS													COMMON VARIANTS INDEX												
<p>21</p> <p>Synthetic tanning agent from effluents of petroleum pyrolysis. M. I. Khadyk and Kh. S. Toporovskaya. <i>Lefkopya Prom.</i> 1944, No. 7-8, 13-14.—Satisfactory syn- taps can be produced from the anthracene fraction of petroleum pyrolysis by sulfonation. The products have a drawback in that they contain by-products which are poorly sol. in water. The neutralization of the sulfonates can be readily effected by dolomite dust. G. M. K.</p>																									
<p>ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

2A

23

Synthetic tanning agents M. I. Khadyk, Kh. S. Toporovskaya, and N. A. Butkov. U.S.S.R. 65,904. Ref: 28, 1046. Tars, b. above 200°, obtained in petroleum pyrolysis are treated with H_2SO_4 (monohydrate or oleum), and the sulfonation product is neutralized, e.g., with dolomite. To the same fraction may also be added naphthalene or tar fractions b. 170-250°. M. Hosh

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND ORDERS		3RD AND 4TH ORDERS	
<p>11A</p> <p>Synthetic tanning agents. Kh. S. Toporov-Kryz. U.S.S.R. 69,180, Aug. 31, 1947. The soap obtained from alk. fermentation of sulfite-cellulose liquors is freed of alk. residues, then treated with phenols, and condensed with aldehydes in an acid or alk. medium. The product is a suitable substitute for natural tannins in the production of Russia leather and partly also of sole leather. M. Hosh.</p> <p>29</p>			
<p>ASR-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>GROUP</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>GROUP</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	

GOLUBEVA, S.K., kand.tekhn.nauk; KRASUKHIN, M.N., kand.tekhn.nauk;
KURAYTIS, S.A., kand.tekhn.nauk; TOPOROVSKAYA, Kh.S., kand.tekhn.
nauk; FRENKEL', P.Ya., kand.tekhn.nauk; KORZINA, Ye.S., mladshiy
nauchnyy sotrudnik; FILIPPOVA, N.B., mladshiy nauchnyy sotrudnik

Works of the Central Scientific and Technical Institute of the
Leather and Footwear Industry in the field of tanning materials.
Nauch.-issl. trudy TSNIKP no. 30:27-46 '59. (MIRA 14:5)
(Tanning materials)

TOPOROVSKAYA, Kh. S., ~~kand. tekhn. nauk~~

Effect of ion exchange on the quality of synthetic tannins and on
leather tanned with them. Kozh.-obuv.prom. no.4:13-16

Ap '59.

(MIRA 12:7)

(Ion exchange) (Tanning)

TOPOROVSKAYA, Kh. S., khand.tekhn.nauk; VAYSBERG, I. Ye., kand.tekhn.nauk

New ND synthetic tanning material for processing sole and Russian leather. Kozh.-obuv.prom. 3 no.1:18-20 Ja '61. (MIRA 14:5)
(Tanning materials)

TOPOROVSKAYA, Kh.S., kand. tekhn. nauk; MIKHAYLOV, A.N., doktor tekhn. nauk.

Eliminating spottiness in leather tanned with use of phenol syntans.
Leg. prom. 16 no.8:19-22 Ag '56. (MIRA 10:12)

(Tanning materials)

TOPORSKAYA, L.P.

Concerning the selection of optimal filtration. Geofiz. razved. no.16:
74-82 '64. (MIPA 18:2)

TOPOROVSKIY, H. M.

U S S R

Elimination of bromine in urine of eczema patients.
A. M. Toporovskii (Clin. Skin Diseases, II Moscow Med.
Inst.). *Vestnik Venerol. i Dermatol.* 1955, No. 2, 24. — PID
When Br is given intravenously and orally to eczema pa-
tients, the elimination of Br in the urine predominates over
other routes, the level of elimination being 2300-6600 %.
O. M. Kosolapoff

TOPOROVSKIY, L.M.; OVSYANNIKOV, L.M.; PUSTOVAYA, A.I.

Late diagnosis of infective forms of syphilis and its causes.
Vest. dermat. i ven. no.5:75-78 '65.

(MIRA 18:11)

1. Muzhskoye venerologicheskoye otdeleniye (zav. - L.M. Toporovskiy; konsul'tant - prof. M.A.Rozentul) klinicheskoy kozhno-venerologicheskoy bol'nitsy imeni V.G.Korolenko (glavnyy vrach A.I.Pustovaya), Moskva. Submitted March 28, 1964.

TOPOROVSKIY, L.M.; OVSIANNIKOV, L.M.; PUSTOVAYA, A.I.

Antibiotics and errors in the diagnosis of syphilis. Sov. med.
28 no.6:123-125 Je '55. (MIRA 18:8)

1. Muzhskoye venerologicheskoye otdeleniye (zav. L.M. Toporovskiy;
konsul'tant - prof. M.A. Rozentul) Klinicheskoy kozhno-venerologicheskoy
bol'nitsy imeni Korolenko glavnyy vrach A.I. Pustovaya),
Moskva.

CHEKMAREV, A.P., akademik; SAF'YAN, M.M., dotsent; MELESHKO, V.I., kand.
tekhn.nauk; TOPOROVSKIY, M.P., inzh.

Experimental investigation of pressure and capacity of roughing
stands for continuous sheet metal rolling mills. Izv. vys. ucheb.
zav.; chern.met. no.5:115-120 My '58. (MIRA 11:7)

1. AN USSR (for Chekmarev). 2. Dnepropetrovskiy metallurgicheskiy
institut i Institut chernoy metallurgii AN USSR.
(Rolling mills)

CHEKMAREV, A.P.; KLIMENKO, V.M.; TOPOROVSKIY, M.P.

Moments and power consumption in rolling with shaped grooves. Izv.
vys.ucheb.zav.; chern.met. no.4:79-88 '61. (MIRA 14:4)

1. Institut chernoy metallurgii AN USSR.
(Rolling (Metalwork))

CHEKMAREV, A.P., akademik; KLIMENKO, V.M., kand.tekhn.nauk;
TOPOROVSKIY, M.P., inzh.

Investigating force factors in rolling with cut grooves.
Trudy Inst. chern. met. AN URSR 15:109-124 '61. (MIRA 15:2)

1. Akademiya nauk USSR (for Chekmarev).
(Rolling mills)

PAVLOV, V.I., kand.tekhn.nauk; MELESHKO, V.I., kand.tekhn.nauk;
~~TOPOROVSKIY, M.P., inzh.~~

Kinematic interaction of horizontal and vertical slabbing mill
rolls. Trudy Inst. chern. met. AN URSR 17:45-54 '62.
(Rolling mills) (MIRA 15:10)

CHEKMAREV, A.P., akademik; TOPOROVSKIY, M.P., inzh.

Certain dependences of transition processes during continuous
cold rolling. Trudy Inst. Chern. Met. AN URSR 17:3-15 '62.
(MIRA 15:10)

1. Akademiya nauk UkrSSR.
(Rolling (Metalwork))

CEKMAREV, A.P. [Chekmarev, A.P.]; KLIMENKO, V.M.; TOPOROVSKI, M.P.
[Toporovskiy, M.P.]

Lamination moments and energy consumption in the cutting gauges
during lamination. Analele metalurgie 16 no.2:152-162 Ap-Je
'62.

CHEKMAREV, A.P.; TOPOROVSKIY, M.P.

Investigating transition processes in continuous rolling.

Izv. vys. ucheb. zav.; chern. met. 7 no.1:78-88 '64.

(MIRA 17:2)

1. Institut chernoy metallurgii.

3(4), 14(10)

AUTHOR:

Toporovskiy, V. I.

SOV/6-59-3-6/16

TITLE:

On the Determination of Horizontal Displacements of Hydraulic Structures (Ob opredelenii gorizontaI'nykh smeshcheniy gidro-sooruzheniy)

PERIODICAL:

Geodeziya i kartografiya, 1959, Nr 3, pp 38-42 (USSR)

ABSTRACT:

The observations of horizontal displacements in hydraulic structures of the Kuybyshevskaya GES (Kuylyshev Water Power Station) are based on the combined method, comprising the triangulation and alignment observations. The position of the end points A and B of the alignment AB is determined by triangulation, that of the intermediate points C, D, E, etc with respect to AB is determined by the aid of a mobile mark as designed by M. S. Murav'yev. In the present paper the author suggests a new observation method with the mobile instrument. Round tables are used to adjust the instrument to the sign. The device is placed on the table. The cone of the latter is introduced into the sign box in such a way that the lifting spindles of the sign enter the grooves of the table. A description follows of the way in which the instrument is

Card 1/3

On the Determination of Horizontal Displacements
of Hydraulic Structures

SCV/6-59-3-6/16

to be shifted in a vertical direction to the alignment. The principal advantage of the method suggested here, as compared to that of the mobile mark is the fact that while determining the displacements of the intermediate points of the alignment (stvor) in a horizontal direction, the observer is not dependent on the assistant's work in his movements. The position of the instrument is determined here according to the distance between the fixed marks, i.e. along the short line. The error introducing the instrument into the alignment along the short line is larger than the one on introducing the mobile mark along the long line. Nevertheless, the accuracy on determining the deviation of the point from the alignment line is about the same in both cases (in both methods). In fact, the error of the result on introducing the mobile instrument into the alignment multiplies by

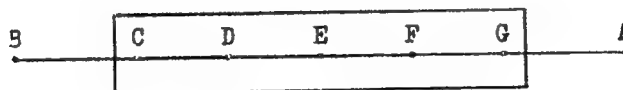
$\frac{L_n}{L}$. L is the length of the alignment, L_n is the distance between the marks situated at the end of the alignment and on the point to be determined. The observation results show

Card 2/3

On the Determination of Horizontal Displacements
of Hydraulic Structures

SOV/6-59-3-6/16

that on determining the deviations of intermediate points the error does not exceed 0.9 mm. Thus, the method suggested is convenient and offers the accuracy required for determining the deviations of the intermediate points from the alignment line. There are 8 figures, 1 table, and 1 Soviet reference.



Card 3/3

BAYNDUROV, V.S., inzh.; TOPORSKIY, V.K., inzh.; TKACHENKO, L.A., inzh.

Pulley with a built-in planetary reducing gear. Izv. vys.
ucheb.zav.; mashinostr. no.10:104-106 '64 (MIRA 18:1)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut i Khar'-
kovskiy mashinostroitel'nyy zavod "Krasnyy Oktiabr".

TOPOTOB, V.N.; TRUBACHEV, O.N.; TOLSTOY, N.I., otv. red.; DYBO, V.A.,
red. izd-va; VOLKOVA, V.G., tekhn. red.; GOLUB', S.P., tekhn.
red.

[Linguistic analysis of hydronyms for the upper Dnieper Valley]
Lingvisticheskii analiz gidronimov Verkhnego Podneprov'ia. Mo-
skva, Izd-vo Akad. nauk SSSR, 1962. 266 p. [Maps 1-13] Karty
1-13. (MIRA 15:7)

(Dnieper Valley--Names, Geographical)

TOPOVSKIY, S.I. (Ulan-Ude)

Operation and production planning in repair plants.
Zhel.dor.transp. 47 no.12:50-51 D '65.

(MIRA 18:12)

1. Nachal'nik proizvodstvennogo otdela Ulan-Udenskogo
lokomotivo-vagonoremontnogo zavoda.

11-26
80048

COUNTRY: : Poland
CATEGORY: :
ABS. JOUR. : RZKhim., No. 22 1959 No.
AUTHOR : Topa, M. and Topowa, K.
INST. : Not given
TITLE : On the Catalytic Preparation of d-Sorbitol in an
Ultrasonic Field
ORIG. PUB. : Przemysl Chem, 37, no 11, 703-705 (1958)
ABSTRACT : The authors discuss the catalytic method for the
preparation of d-sorbitol in an ultrasonic field.
A brief explanation of the destructive hydrogenation
of the glucoses taking place during this
process is given. The chemical and physical
processes taking place during the application of
similar catalytic methods in the preparation of
other products are discussed. A series of experi-
ments on the destructive hydrogenation of glucoses
with different catalysts and with different

CARD: 1/2

TOPA, Mieczyslaw; TOPCWA, Karolina

Influence of ultrasonic waves on the speed of mutarotation of sugars.
Rocz chemii 33 no.6:1493-1495 '59. (EEAI 9:9)

1. Pracownia Stosowania Ultradzwiekow Instytutu Farmaceutycznego,
Warszawa.
(Ultrasonics) (Sugars)

CA

Organic Chemistry - 10

Cleavages with diazonium compounds. XI. Phenolphthalein. Relationship between constitution and biologic action. H. Ziegler and H. Toppler (Univ. Graz, Austria). Z. Naturforsch. 7b, 122-4 (1952); cf. C.A. 45, 10210a.— Phenolphthalein (I) and 2 mols. $\text{o-O}_2\text{NC}_6\text{H}_4\text{N}_2\text{Cl}$ reacted in 5% NaOH, with sufficient NaOH added during the reaction to maintain the alk., to yield 10% 2,4-($\text{o-O}_2\text{NC}_6\text{H}_4\text{N}_2$) $\text{C}_{10}\text{H}_6\text{O}_4$, m. 237-8°; acetate, yellow-red needles, m. 160-70°. o-Cresolphthalein and 2.2 mols. PhN_2Cl in 4 mols. 5% NaOH gave a product yielding on recrystn. from AcOH 3,5,1,2-(PhN_2) $\text{C}_{10}\text{H}_6(\text{OH})_2$, m. 116-17°, and the AcOH filtrate contained an unknown substance, m. 237-8°. The relationship between the reactive groups of I and its pharmacol. action is discussed. A. Dietz

TOPRISHCHEV, G.A.; YESIN, O.A.; BRATCHIKOV, S.G.

Thermochemical investigation of $PbO - Na_2O - SiO_2$ melts. *Izv.vys.*
ucheb.zav.; tsvet.met. 5 no.1:50-58 '62. (MIRA 15:2)

1. Ural'skiy politekhnicheskiy institut, kafedra teorii
metallurgicheskikh protsessov.
(Systems (Chemistry)) (Metallic oxides)

TOPROVER, G.S.
TOPROVER, G.S., professor; BALANDINA, A.I., kandidat meditsinskikh nauk.

Exclusion by resection and demucosation of the pyloric antrum in complicated ulcers of the duodenum. Vest.khir. 76 no.7:103-105 Ag '55. (MLRA 8:10)

1. Iz gosspital'noy khirurgicheskoy kliniki (zav.prof. G.S. Toprover) Stalingradskogo meditsinskogo instituta

(STOMACH, surg.
exclusion & demucozation of pyloric antrum in duodenal ulcers)

(PEPTIC ULCER, surg.
exclusion & demucozation of pyloric antrum in duodenal ulcers)


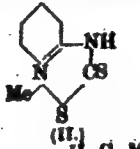
TOPROVER, G. S., prof.

Principles of surgical therapy in varicose veins of the lower
extremities. Vest. khir. no.12:49-56 '61. (MIRA 15:2)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. G. S.
Toprover) Volgogradskogo meditsinskogo instituta.

(VARIX) (EXTREMITIES, LOWER—DISEASES)

TOPOROVA, E.		PROCESSING AND PROPERTIES INDEX	
2587.	ACTION OF SOME SULPHUR COMPOUNDS IN GASOLINE ON COPPER STRIP. Eigenson, A. S. and Toporova, E. P. (Nef. Khoz., 1948, (2), 47-49). Refined benzol (total S = 0.03%) had H ₂ S added and was then diluted to known concentration of H ₂ S. Tests were then carried out with CdCl ₂ and Cu strip. Latter reported positive only if a steel-grey, brown, or black colour developed. The CdCl ₂ tests required a minimum concentration of 5.10 ⁻⁴ % whilst Cu strip showed a positive result at 3.10 ⁻⁴ %. A second series of tests was made using n-heptane (total S = 0.002%). In this case the limit concentration for detection of H ₂ S was 10 ⁻³ % whilst for elementary S it was 5.10 ⁻³ %, but appreciably lower if traces of mercaptan were present. When only traces of H ₂ S was present, addition of small amounts of mercaptan can improve the Cu strip test. Mercaptan alone, up to 2.4 %, had no effect on the Cu strip, but when using the "doctor" test the sensitivity for mercaptan lies between 3.10 ⁻⁴ and 10 ⁻³ %. All copper-strip tests were carried out by the standard U.S.S.R. procedure.		
I.P.			
ASB-11A METALLURGICAL LITERATURE CLASSIFICATION			
SUBJECT		COLLECTION	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	

1ST AND 2ND COPIES										3RD AND 4TH COPIES									
PROCESSES AND PROPERTIES INDEX																			
<p>BC</p> <p>Action of carbon disulphide on methylpyridon-amine. K. S. Turochikh (Compt. rend. Acad. Sci. U.R.S.S., 1936, 1, 23-26).—Methylpyridonimine (prepared from 2-OH₂N-NH₂ and MeI) with CS₂-EtOH gives the methylpyridonimine salt (I), m.p. 160°, of N-methylpyridonedithiocarbamic acid, but with CS₂ alone gives N-methylpyridodithiodiazole (II), m.p. 135°, b.p. 173°/3 mm. without decomp., sparingly sol. in H₂O and unaffected by conc. aq. NaOH.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(I)</p> </div> <div style="text-align: center;">  <p>(II) H. G. M</p> </div> </div>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			

BC

2-3

Nitration method of 8-nitro-6-methoxyquinoline.
 K. S. Thorpe, (Compt. rend. Acad. Sci. U.R.S.S., 1938, 4, 263-264). Addition of HNO_3 to 8-nitro-6-methoxyquinoline in H_2SO_4 below 40° gives 5:8-dinitro-6-methoxyquinoline, m.p. 234° , in good yield. H. G. M.

ASR-5LA METALLURGICAL LITERATURE CLASSIFICATION

GROUPS										SUBGROUPS										SUBSUBGROUPS										SUBSUBSUBGROUPS									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

BC

2-3

Cases of mobility of the nitro-group. Mobility of the nitro-group in 5:8-dinitro-8-methoxyquinoline. K. S. TOROSKIN (Compt. rend. Acad. Sci. U.R.S.S., 1935, 4, 264-266; cf. preceding abstract).—5:8-Dinitro-8-methoxyquinoline when heated with 8-amino- α -diethylaminopentane gives 5-nitro-8-(8-diethylamino- α -methylbutyl)amino-6-methoxyquinoline, reduced by $\text{SnCl}_2\text{-HCl}$ to the corresponding 5- NH_2 -derivative, b.p. $280^\circ/3$ mm., which gives a salt, m.p. 165° , with 1 mol. of di-(2-hydroxy-3-carboxynaphthyl)methane. This salt is also obtained by similar methods from the nitration product of 8-(8-diethylamino- α -methylbutyl)amino-6-methoxyquinoline.

H. O. M.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

<p>1ST AND 2ND ORDERS</p> <p>PROCESSES AND PROPERTIES INDEX</p> <p>3RD AND 4TH ORDERS</p>																									
<p>26</p> <p>✓ The prospect of the application of palladium as a catalyst in the industrial production of acriquinine, by K. C. Topshew.</p> <p>Acad. Sci. U.S.S.R. Inst. Gen. Chem. Annals, Part 19, 1943, p. 60.</p> <p>Palladium as a catalyst in a process for the transformation of Methylfuran (Silvano) hydrate into acetylpropyl alcohol, used in large quantities in the production of the synthetic drug "acriquinine" (specifically used to combat malaria)</p>																									
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									
<p>1ST AND 2ND ORDERS</p>													<p>3RD AND 4TH ORDERS</p>												

TOPSHTEYN, R. Ye.

Preparation of bacteriological peptones and comparison of their chemical composition. R. E. Topshtein. *Microbiology* (U. S. S. R.) 9, 197-205 (in English, 206) (1940); cf. Knight, *Bacterial Nutrition*, London, 1930. --Since the domestic com. peptone preps. were unsatisfactory for bacteriol. and serological purposes, peptones were prepd. from various sources by several methods, their activities assayed and chem. compns. compared with those of the best imported products. Best results were obtained with peptones prepd. by fermentation (pepsin peptones from rumens and from muscle layers of pig stomach, pepsin-trypsin peptones, and fibrin and trypsin peptones from rumens) and with yeast autolyzates. The best preps. are low in albumose N (7-20% of total N) and high in free amino N (22-61%) and contain 2.5-6.5% tryptophan. T. Laanes

11 C

ASA-31A METALLURGICAL LITERATURE CLASSIFICATION

16

CA TOPSHTEYN, R. Ye.

Formation of propylene glycol by fermenting glycerol.
L. M. Utkin and R. Ye. Topshtein. *Mikrobiologiya* 19,
118-20(1980). --Selected active cultures of *Acetobacter*
gave yields of 1,3-propanediol up to 40% of theory. The
literature correctly reports that 1/2 to hydrogenate half of
the glycerol comes from dehydrogenating the other half,
but incorrectly postulates lower yields in peptone or yeast-
water mediums, since they are H₂ acceptors. Actually
they increase both rate and amt. of diol formation. For
high yield, glycerol concn. must not be above 3%.
Julian P. Smith

All-Union Sci. Res. Chemicalo-Pharmaceutical Inst. in. Ordzhonikidze
Moscow

ANDRONIKASHVILI, E.L., akademik; BUDA, B.G.; DEVNOZASHVILI, D.S.;
KIKNADZE, G.I.; KITSMARISHVILI, E.S.; TOPSHYAN, L.S.;
CHANTURIYA, V.M.

Low-temperature loop of an IRT-2000 reactor. Soob. AN Gruz.
SSR 34 no.1:45-52 Ap'64 (MIRA 17:7)

1. AN Gruzinskoy SSR (for Andronikashvili).

TOPSKAYA, A.I., master-tsvetovod

Joyful occupation. Gor.khoz.Mosk. 33 .no.6:39-40 Je '59.
(MIRA 12:10)

1. Izmaylovskiy kombinat dekorativnogo sadovodstva.
(Moscow-- Floriculture)

GANZ, Semen Naumovich; Prinyali uchastiye: MEDOBACH, G.G.; TOPTUNENKO, Ye.T.;
LEYBOVICH, S.B.; BRAGINSKAYA, R.I.; DAL', V.I., doktor tekhn. nauk, prf.,
red.; NESTERENKO, A.S., red.; PIETENITSKIY, V.Yu., tekhn. red.

[Technological processes and equipment of the synthesis gas and
fixed nitrogen industries] Tekhnologicheskie protsessy i oborudo-
vanie proizvodstv sintez-gaza i svyazannogo azota. Pod red. V.I.
Dalia. Khar'kov, Izd-vo Khar'kovskogo gos. univ., im. A.M. Gor'kogo,
1960. 550 p. (MIRA 14:8)
(Gas manufacture and works) (Nitrogen)

TOPTUNENKO, Ye.T.

Approximate calculation of the strength of rectangular edges of
cast iron rolls. Trudy DKHTI no.10:37-41 '60. (MIRA 14:1)
(Rolls (Iron mills))

S/137/61/000/006/035/092
A006/A101

AUTHOR: Toptunenko, Ye.T.

TITLE: An experimental method of determining vertical and lateral forces during the rolling of strips in a rectangular groove with limited widening

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1961, 4, abstract 6D28 ("Tr. Dnepropetr. khim.-tekhmol. in-t", 1960, no. 10, 97 - 99)

TEXT: The author describes experiments carried out on a "150" rolling mill at the laboratory of the Dnepropetrovsk metallurgical institute. To determine lateral forces during rolling a side dynamometer was used which was mounted in the covered section of the groove and operated for compression. The dynamometer was equipped with glued-on wire pickups of 25 mm basis and 220 ohm resistance each. To determine the vertical component of the rolling force, 2 beam dynamometers were used, operating for bending and equipped with temperature pickups of 200 ohm resistance and 25 mm basis. The dynamometers were mounted underneath the clamping screws of the mill. The experimental results are presented in tables. V. Pospelkov

[Abstracter's note: Complete translation]

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TOPTUNENKO, Ye.T.

Some mechanical properties of cast iron rolls used for strength
calculations. Trudy DKHTI no.10:175-178 '60. (MIRA 14:1)
(Rolls (Iron mills))

SOV-107-58-9-30/38

AUTHORS: Fadin, V.; Toptunov, V.

TITLE: Using Contact Rivets for Wiring (Montazh pri pomoshchi kontaktnykh zaklepok)

PERIODICAL: Radio, 1958, Nr 9, pp 49 (USSR)

ABSTRACT: For compact wiring of miniature radio apparatus, counter-sunk holes are drilled at contact points in the pertinax panel. Hollow rivets cut from brass or copper tube are inserted in the hole and splayed out. The holes are then soldered up. The wire from the various components can then be inserted into the contact points from both sides of the panel and a reliable, compact joint ensured. There are 3 figures.

1. Radio equipment--Construction
2. Rivets--Applications
3. Soldered joints

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LEPIN, G.F. (Kramatorsk); TOPTUNOVA, L.M. (Kramatorsk)

A dependence for creep. Izv. AN SSSR. Mekh. no.5:134-135 S-0 '65.
(MIRA 18:10)

TOPTYGIN, D. YA.
MOROZOV, I.S.; TOPTYGIN, D. Ya.

Interaction between titanium tetrachloride and the chlorides of
tantalum, niobium, and aluminum. Zhur. neorg. khim. 2 no.8:1915-
1921 Ag '57. (MIRA 11:3)
(Chlorides) (Solubility)

7 ОРТЫГЛЫ, Д. Я.

MOROZOV, I.S.; TOPTYGIN, D.Ya.

Solubility of ferric chloride and its alloys with niobium
chloride, aluminum chloride, and sodium chloride in titanium
tetrachloride. Zhur.neorg.khim. 2 no.9:2129-2135 S '57.

(MIRA 10:12)

(Solubility) (Chlorides)

AUTHORS:

Morozov, I.S., Toptygin, D.Ya.

TITLE:

On the Interaction Between Ammonium Chloride and the Chlorides of Tantalum, Niobium, Titanium, Aluminum, and Iron
(O vzaimodeystvii khloristogo ammoniya s khloridami tantala, niobiya, titana, alyuminiya i zheleza)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 7, pp 1637-1645
(USSR)

ABSTRACT:

The systems $TaCl_5-NH_4Cl$ and $NbCl_5-NH_4Cl$ were investigated by thermal analysis. The results of these investigations showed that in the system $TaCl_5-NH_4Cl$ the compound NH_4TaCl_6 exists with a congruent melting point at $304^\circ C$. NH_4TaCl_6 is of light yellow color. In the system $NbCl_5-NH_4Cl$ the compound NH_4NbCl_6 forms with an incongruent melting point at $205^\circ C$. This compound is of green color. The system $TiCl_4-NH_4$ assumes a bright yellow color when heated, and this is probably accompanied by the formation of ammonium hexachlorotitanate. Tensimetric analyses were carried out of the compounds NH_4AlCl_4 , NH_4TaCl_6 and NH_4NbCl_6 . The results obtained showed that each of the four double chloride compounds

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On the Interaction Between Ammonium Chloride and the
Chlorides of Tantalum, Niobium, Titanium, Aluminum.

SCW 78-3-7-30/44

behaves differently when heated. NH_4AlCl_4 sublimates without decomposition, but the compounds NH_4TaCl_6 and NH_4NbCl_6 are decomposed into their components when heated. There is no reaction between titanium tetrachloride and the compounds NH_4AlCl_4 , NH_4TaCl_6 and NH_4FeCl_4 . Heating of the above mentioned chlorides was found to be accompanied by the formation of layers of titanium tetrachloride in a wide interval of concentration. NH_4NbCl_6 decomposes completely when heated with titanium tetrachloride to a temperature of 250°C . It follows herefrom that a purification of titanium tetrachloride from chlorides of tantalum, aluminum and iron dissolved in it is possible with the aid of ammonium chloride. This method can, however, not be employed with success in the presence of NbCl_5 . There are 3 figures, 5 tables, and 12 references, 5 of which are Soviet.

SUBMITTED: May 31, 1957

1. Ammonium chlorides--Chemical reactions 2. Metal chlorides
--Chemical reactions

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TOPTYGIN, D.Ya, Sand Chem Sci - (Diss) "Investigation of the reaction between titanium tetrachloride and the chlorides of elements found in the composition of natural titanium raw materials." Moscow, 1960, 13 pp (Moscow Institute of Fine Chemical Technology in L. V. Lomonosov) (KL, 34-00, 120)

S/598/60/000/004/011/020
D217/D302

AUTHORS: Morozov, I.S. and Toptygin, D.Ya.
TITLE: Physico-chemical basis of purification processes for titanium tetrachloride
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. No. 4. Moscow, 1960. Metallurgiya titana, 102-114

TEXT: The study of systems formed by the chlorides of Mo, Ta, Al, Fe and V with $TiCl_4$ was carried out by three methods: Thermal analysis, solubility and tensile testing. Owing to the tendency of the above chlorides to hydrolyze and volatilize, the thermal analysis of the mixtures was carried out in sealed containers. The chloride mixtures (2-5 g) were melted in a furnace, and, in order to ensure even cooling, were each placed in a porcelain container lined with asbestos wool. A thermocouple was used to plot cooling curves and in individual cases, a differential thermal analysis of the mixtures was carried out. Ensuring uniform cooling of the mixtures from 300 C to the temperature at which the

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Physico-chemical basis ...

eutectic solidifies (-24°C) was difficult, and, therefore, the latter was determined separately. For this purpose, the chlorides in their containers were cooled by a mixture of dry ice and alcohol, and heating curves were recorded by means of a thermocouple. Investigation by the solubility method was carried out between 18 and 110°C . The mixture of chlorides was placed in a container consisting of a test tube with a side branch. The container with the chlorides was sealed, heated until the chlorides were completely molten and placed in a thermostat maintained at a definite temperature for 20-40 hours. After equilibrium had established itself between the solid phase formed and the solution, part of the transparent solution was decanted into the side branch. The latter was cut off and the composition of the liquid phase was determined by chemical analysis. On distilling TiCl_4 from the solution containing excess solid sodium chloride, no aluminum chloride could be detected in the distillate. This property was taken advantage of in the analysis for the separation of the main body of TiCl_4 from AlCl_3 . A 5-10 g probe was transferred to a Würtz flask and 1-2 g dry NaCl added. TiCl_4 was

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D217/D302

Physico-chemical basis ...

distilled and the residue dissolved in dilute HCl. From the solution obtained, aluminum was precipitated with NaF as cryolite or by ammonia as the hydroxide. Weighing was carried out in the form of Al_2O_3 which always contained some titanium dioxide. Ti was determined calorimetrically by the reaction with H_2O_2 . Ta and Nb were separated similarly from $TiCl_4$, however in this case small traces of Ta and Nb chlorides were detected in the distillate. Final separation of Ta and Nb from Ti was carried out by means of phenyl arsenic acid. A visual method was used to study mixtures of $TiCl_4$ and $FeCl_3$ containing 0.5-2% $FeCl_3$. It was found that $TiCl_4$ can be purified from $AlCl_3$ and $FeCl_3$ by means of alkali metal chlorides. The formation of the chemical compound $NaFeCl_4$ in the system $FeCl_3$ -NaCl was proved. Separation of Ta and Nb in the form of chlorides during dissolution of a mixture of the latter in $TiCl_4$ was found to be impossible. The degree of solubility of the chlorides of

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Physico-chemical basis . . .

S/598/60/000/004/011/020
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Ta, Nb, Al and Fe in TiCl_4 was found to vary considerably in the presence of other chlorides. The study of systems containing niobium pentachloride by a visual method is difficult owing to the presence of traces of niobium perchlorate. The solubility of NbOCl_3 at low temperatures is extremely low. At 280-300°C transparent solutions of up to 2% NbOCl_3 content were obtained. TiCl_4 does not react with the compounds NH_4AlCl_4 and NH_4TaCl_6 . On heating the above chlorides with TiCl_4 , stratification occurs in a wide concentration interval. The compound NH_4NbCl_6 is decomposed by TiCl_4 . There are 16 figures, 7 tables and 12 references: 5 Soviet-bloc and 7 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: S.L. May, H.W. Henderson and H.A. Johansen. Ind. Eng. Chem, 46 (12), 2495, 1954; L.N. Rowe and E.R. Opie. J. of Met., 7, 11, 1955, 1183; H.F. Johnston, H.C. Weihgarther and W.E. Winsche. J.m. Chem. Soc., 64, 241, 1942; P. Fireman. J.M. Soc., 26, 745, 1904.

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68111
SOV/78-5-1-15/45

5(2)

AUTHORS:

Morozov, I. S., Toptygin, D. Ya.

TITLE:

Thermal Stability of Hexachlorotitanates of Monovalent Metals

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, pp 88 - 90
(USSR)

ABSTRACT:

The possibility of obtaining pure titanium by the electrolysis of titanium halide compounds in a melt of alkali chlorides or alkali fluorides induced the authors to investigate the thermal stability of the complex compounds forming in this connection. They investigated the reaction between $TiCl_4$ and alkali chlorides, by directing $TiCl_4$ -vapor-saturated chlorine over heated alkali chloride. $CaCl$ was completely transformed into Ca_2TiCl_6 at $660 - 700^\circ$. In the case of $RbCl$ the reaction product always still contains residues of unreacted $RbCl$. KCl does not form any complex salt at $600 - 700^\circ$, and 10% of K_2TiCl_6 at most were obtained at $400 - 500^\circ$. $NaCl$ did not react with $TiCl_4$. The vapor pressure of $TiCl_4$ was determined on specially prepared

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Thermal Stability of Hexachlorotitanates of Monovalent Metals 68111
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pure compounds Me_2TiCl_6 ($Me = Cs, Rb, K, Tl$) (Table 1, Figs 1,2). This investigation confirmed as well that Cs_2TiCl_6 exhibits the highest thermal stability. This decreases in the series $Cs_2TiCl_6 > Rb_2TiCl_6 > K_2TiCl_6 > Tl_2TiCl_6$. Table 2 supplies the calculated decomposition temperatures of chlorotitanates of Cs, Rb, K, Tl. Despite the large differences in the decomposition temperatures the calculated decomposition reaction heats amount to about 33 kcal/mol with all four chlorotitanates. Table 3 shows the change of free energy in the thermal dissociation of alkali chlorotitanates. There are 2 figures, 3 tables, and 5 references.

SUBMITTED: September 10, 1958

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S/080/61/034/004/001/012
A057/A129

AUTHORS: Toptygin, D. Ya., Morozov, I. S.

TITLE: Application of the physico-chemical analysis to solution of the problem of manufacture of titanium and its compounds by the chlorination method.

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 4, 1961, 713 - 725

TEXT: In the present paper a review of Soviet and non-Soviet investigations concerning the reaction of 2-, 3-, and 4- valent titanium with alkali, alkali earths and several other elements is given and the presented results are discussed. The topic of discussions is the interaction of titanium with other elements in chloride systems. The data are of importance for the development of purification methods of titanium tetrachloride, as well as for separation of valuable impurities in titanium processing (such as niobium and tantalum). The impurities present in titanium tetrachloride pass into the latter during reduction. The prevailing method is the purification of $TiCl_4$ with NaCl only as described by A.W. Henderson et al. (Ref. 15: Ind. Engl. Chem., 50, 611, 1958), or

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Application of the physico-chemical

in mixture with other chlorides as recommended by other authors. The present authors suggested (Ref. 12: Soviet patent no. 133866, February 2, 1960) purification of titanium and niobium chlorides from zirconium, aluminum and iron chlorides by passing salt mixtures of these chlorides through briquettes formed of carbon and alkali chloride. In the present paper the following systems are discussed and corresponding literature data are cited: $TiCl_4-VOCl_3$ and $TiCl_4-VCl_4$ were investigated, among others, by the present authors and absolute immiscibility of the chlorides was observed. Corresponding data were obtained by V. Gutman and S. Aftalion-Hinl (Ref. 23: Monatsh., 84, 207, 1956), H. Nishida and K. Oyama (Ref. 25: J. Chem. Soc. Japan, Ind. Chem. Sect., 60 (11), 1434, 1957), J. Shelton and S. Tyree (Ref. 26: J. Am. Chem. Soc., 81 (10), 2290, 1959), and P. Ehrlich and W. Siebert (Ref. 27: Z. Anorg. Chem., 301, (5-6), 275 (1959)). The systems $TiCl_4-SiCl_4$, $TiCl_4-CCl_4$ and $TiCl_4-C_6Cl_6$ were first studied by N. Nasu (Ref. 28: B1. Chem. Soc. Japan, 8, 195, 1933) and later by H. Sackmann et al. (Ref. 29: Z. Anorg. Ch., 294 (3-4), 120, 1958), and N.N. Delarov et al. (Ref. 22: Izv. AN SSSR, OTN Metall. i topl., 4, 33 (1960)). Systems $TiCl_4-AlCl_3$ and $TiCl_4-FeCl_3$ were first investigated by L.N. Eyngorn (Ref. 32: Ukr. Khim. Zh., 16(4), 404, 1950), and in more detailed investigations by the present authors (Ref. 34: ZhNKh,

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2(8), 1915, 1957, and Ref. 35: ZhNKh, 2(9), 2129, 1957) by I. Krichma and J. Schau-
mann (Ref. 33: US patent 2502327, 1950), and lately by J. Moriyam and H. Inagaku
(Ref. 38: J. Mining. a Metalurg. Inst. Japan, 76, 101, 1960) P. Ehrlich and G.
Dietz (Ref. 39: Z.Anorg.Ch., 305, 158, 1950), and J. Saheki and K. Funaki (Ref. 40:
J. Chem. Soc. Japan, Pure chem. sect. (Nippon Kagaku Zasshi) 78(6), 754, 1957).
These two systems are of the eutectic type. Solubility of FeCl_3 in TiCl_4 is very
low at room temperature but increase sharply above 204°C . In the systems TiCl_4 -
 NbCl_5 and TiCl_4 - TaCl_5 solubility of NbCl_5 and TaCl_5 in TiCl_4 was determined first
by D. M. Tarasenkov and A. V. Konandin (Ref. 41: ZhNKh, 10(14), 1319, 1940). The
present authors estimated (Ref. 34) that these two systems are of the eutectic
type. This was proved by data from L. A. Nisel'son and G. L. Perekhrest (Ref. 42:
ZhNKh, 3(9), 2150, 1958, and Ref. 39). In presence of NbOCl_3 solubility of NbCl_5
in TiCl_4 changes considerably. Investigations of the present authors (Ref. 34
and 35) into systems TiCl_4 - AlCl_3 - FeCl_3 and TiCl_4 - NbCl_5 - TaCl_5 demonstrated consi-
derable increase in FeCl_3 solubility in TiCl_4 in presence of AlCl_3 . Obtained data
also indicated that recommendation for separation of NbCl_5 and TaCl_5 based on
different solubility in TiCl_4 (Ref. 41) and analogous separation of Al and Fe
(Ref. 33) are unfounded, since from TiCl_4 solutions solid chloride solutions

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with the initial composition will separate out. In systems $TiCl_4-NbCl_5-AlCl_3$, $TiCl_4-NbCl_5-FeCl_3$ and $TiCl_4-AlCl_3-TaCl_5$ I. S. Morozov observed (Ref. 44: ZhNKh, 1(12) 2792, 1956) a sharp increase in solubility of $NbCl_5$ and $TaCl_5$ in $TiCl_4$ in presence of $AlCl_3$ and $FeCl_3$, but also a sharp increase in solubility of the latter effected by the presence of $NbCl_5$ and $TaCl_5$. Solubility of $TiOCl_2$ in $TiCl_4$ was investigated by T. A. Zavaritskaya and T. A. Pustovalova (Ref. 48: Tsuet. met., 10, 50, 1958), (Ref. 22) and D. Ya. Toptygin (Ref. 47: Dissertation, M., 1960). According to this data it can be assumed that $TiOCl_2$ impurities in $TiCl_4$ distillates are caused by moisture penetrated into the condensation device. Since commercial $TiCl_4$ contains gaseous impurities, data on solubility of gases in $TiCl_4$ presented by Delarova (Ref. 22) are important. Literature data demonstrated that chlorides which are not present in technical $TiCl_4$, such as $HgCl_2$, Hg_2Cl_2 , $GaCl_3$, $MoCl_5$, WCl_6 , $AsCl_3$, $SbCl_3$, $SbCl_5$, $SeCl_4$, $TeCl_4$, $MnCl_2$ etc., are soluble in $TiCl_4$, but do not form compounds, while sulfur and phosphorus chloride form compounds with $TiCl_4$. $SnCl_2$ and $ZnCl_2$ as observed by Toptygin (Ref. 47), are very different from the other chlorides in relation to $TiCl_4$. Interaction between $TiCl_4$ and alkali and alkali earth chlorides have been investigated frequently, because of the importance for the purification procedures of

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$TiCl_4$. Corresponding experiments were made by Ehrlich (Ref. 59: Z. Naturforsch., 9B (4), 326, 1954), S.F. Belov and S. I. Sklyarenko (Ref. 60: Tsvet. met., 11, 37, 1958), and L. A. Tsiovkina, M. V. Smirnov (Ref. 61: ZhNKh, 4(1), 158, 1959). F. V. Schossberger proposes (Ref. 54: Chem.Eng. Prog., 53, 94, 1957); Ref. 55: US Patent 2857242, October 21, 1958; Ref. 56: US patent 2857143, October 21, 1958; Ref. 57: US patent 2857265, October 21, 1958; Ref. 58: Ind. Engl. Chem., 51(5), 669, 1959) a large scale production of pure $TiCl_4$ by decomposition of potassium or ammonium chloro-titanates. The present authors prepared (Ref. 62: ZhNKh, 5(1) 88, 1960) alkali hexachloro-titanates directly by reaction of gaseous $TiCl_4$ with alkali metal chlorides. S. N. Flengas (Ref. 63: Ann. N. Y. Acad. Sci., 79, (11) 853, 1960) synthesized K_2TiCl_6 by the reaction of $TiCl_4$ with KCl, as well as $TiCl_4$ with KCl + NaCl, and assumes contrary to the opinion of the present authors that above 800°C Na_2TiCl_6 is formed. Density of the saturated vapor of $TiCl_4$ over K_2TiCl_6 was determined among others by (Ref. 59) and S.N. Flengas (Ref. 71: Canad. J. Chem., 38(6), 813, 1960). Thermal stability of alkali and ammonium hexachlorotitanates was studied by the present authors (Ref. 70: ZhNKh, 5(11), 2518, 1960) and it was observed that none of these titanates is stable at 700-800°C. In this work (Ref. 70) the authors were first to describe a new type of

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titanium compounds obtained by partial hydrolysis of alkali hexachlorotitanates. The physico-chemical principle of $TiCl_4$ purification from $AlCl_3$ and $FeCl_3$ by means of alkali metal chlorides is based on the fact that $TiCl_4$ does not form compounds with $NaCl$; it forms unstable compounds with KCl , which decompose at relatively low temperatures. H. Johnstone et al. (Ref. 79; J. Am. Chem. Soc., 64, 241, 1942) determined that the system $FeCl_3$ - $NaCl$ has one eutecticum. Contrary to the opinion of the last-mentioned authors the present authors assessed (Ref. 47; Ref. 80; Izv. AN SSSR, OZhN, 11, 1920, 1959) the formation of $NaFeCl_4$, which does not decompose in $TiCl_4$ - $FeCl_3$ - $NaCl$ contains sufficient $NaCl$ for the formation of $NaFeCl_4$, the $TiCl_4$ phase does not contain even traces of $FeCl_3$, while in excess of $FeCl_3$ a part of the latter is dissolved in $TiCl_4$. The use of $NaCl$ for $TiCl_4$ purification can be applied also to $AlCl_3$, since $NaAlCl_4$ (as well as $NaFeCl_4$) is formed at relatively low temperatures and has a low vapor density up to 500°C. According to V.G. Gopiyenko and A.I. Ivanov (Ref. 65; Izv. AN SSSR, OTN, Metallurg. i topl., 4, 15, 1960) which studied the system $TiCl_4$ - $AlCl_3$ - $NaCl$, the $NaAlCl_4$ phase can dissolve 2% of $TiCl_4$. Several investigations demonstrated that $NbCl_5$ and $TaCl_5$ form in presence of $TiCl_4$ the compounds $NaNbCl_6$ and $NaTaCl_6$. The latter decompose at low temperatures, but the reaction occurs with $NaCl$ at

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A057/A129

Application of the physico-chemical

higher temperatures than between FeCl_3 or AlCl_3 and NaCl . In TiCl_4 purification processes NaCl can be substituted by KCl or NH_4Cl . Contrary to Me_2TiCl_6 compounds, chlorides of 2- and 3-valent titanium are more stable. Systems $\text{TiCl}_3\text{-NaCl}$ and $\text{TiCl}_3\text{-KCl}$ were studied by M.V. Kamenetskiy (Ref. 88: Tsvet. met., 2, 39, 1958); Ref. 89: Izv. vuzov, Tsvet. metallurgiya, 3(1), 119, 1960) and the congruent melting compound K_3TiCl_6 was observed, while B.F. Markov and R. V. Charnov (Ref. 90: Ukr. Khim. zh., 25(3), 279, 1959) estimated also KTiCl_4 , and P. Ehrlich et. al. (Ref. 91: Z. Anorg. Ch., 299, (3-4), 213, 1959) determined the incongruent melting compounds Na_3TiCl_6 and K_2TiCl_5 . According to Ref. 90 in the system $\text{TiCl}_3\text{-RbCl}$ and $\text{TiCl}_3\text{-CsCl}$ congruent melting Rb_3TiCl_6 , RbTiCl_4 , Cs_3TiCl_6 and CsTiCl_4 are formed. K. Komarek and P. Gerasimenko (Ref. 93: J. Electrochem. Soc., 105 (4), 210, 1958) studied the systems $\text{TiCl}_2\text{-NaCl}$, $\text{TiCl}_2\text{-KCl}$ and $\text{TiCl}_2\text{-MgCl}_2$ and determined the two chemical compounds NaTiCl_3 and Na_2TiCl_4 while P. Ehrlich and H. Kühnel (Ref. 94: Z. anorg. Ch., 292, 146, 1957) observed KTiCl_3 and K_2TiCl_4 . The system $\text{TiCl}_2\text{-MgCl}_2$ was investigated by K. Komarek and P. Gerasimov (Ref. 95: J. Electrochem. Soc., 105, (4), 210, 1958) and no chemical compounds were observed. M. Siebert and M.A. Steinberg (Ref. 96: J. Metals., 8(9), 1162, 1956) indicate that TiCl_2 is soluble in molten lithium chloride. There are 2 tables and 96 references: 39 Soviet-bloc and 57 non-Soviet-bloc.

SUBMITTED: November 21, 1960
Card 7/7

TOPTYGIN, D.Ya.

Interaction of niobium and tantalum pentachlorides with lithium
and copper chlorides. Zhur.neorg.khim. 8 no.5:1187-1189 My
'63. (MIRA 16:5)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.
(Chlorides) (Systems (Chemistry)) (Thermal analysis)

TOPTYGIN, I.N.

Annihilation of positrons in an ionized gas. Zhur. eksp. i teor. fiz.
43 no.3:1031-1036 '62. (MIRA 15:10)

1. Leningradskiy politekhnicheskii institut.
(Plasma (ionized gases)) (Positrons)

BATYGIN, Vladimir Vladimirovich; TOPTYGIN, Igor' Nikolayevich;
PETRUN'KIN, A.M., red.; KAL', M.M., red.; LUK'YANOV, A.A.,
tekhn. red.

[Collected problems on electrodynamics] Sbornik zadach po
elektrodinamike. Pod red. M.M.Bredova. Moskva, Gos.izd-vo
fiziko-matem.lit-ry, 1962. 480 p. (MIRA 15:6)
(Electrodynamics)

SOV/56-36-2-21/63

24(5)
AUTHOR:

Toptygin, I. N.

TITLE:

The Multiple Scattering of Polarized Electrons
(Mnogokratnoye rasseyaniye polyarizovannykh elektronov)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 2, pp 488-498 (USSR)

ABSTRACT:

In experiments with polarized particles the influence exercised by multiple scattering on polarization must be taken into account because it may change both the amount and the direction of the polarization vector. A. I. Alikhanov et al. (Ref 1) as well as Heintze (Ref 2) used this effect for the purpose of transforming longitudinal into transversal polarization (observation in the case of azimuthal asymmetry in the scattering of electrons on the Coulomb (Kulon) field of nuclei). The first estimate of electron depolarization in multiple scattering was made by Bethe and Rose (Bete, Rouz) (Ref 3); Muhlischlegel (Myul'shlegel') and Koppe (Ref 4) determined the distribution function and the polarization vector in multiple scattering for small scattering angles. The author of the present paper investigates the angular distribution and the polarization of particles which have penetrated scatterers of

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The Multiple Scattering of Polarized Electrons

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limited thickness for large as well as for small angles without, however, taking inelastic collisions into account. The multiple elastic scattering of particles (spin 1/2) is assumed to occur in a homogeneous and isotropic medium. For the purpose of describing the distribution function and the polarization vector of the particles a kinetic equation of the form

$$\begin{aligned} \cos \theta \frac{\partial I}{\partial \tau} &= -I + \int (BI' + D\vec{V}\vec{G}') d\Omega' , \\ \cos \theta \frac{\partial \vec{G}}{\partial \tau} &= -\vec{G} + \int (A\vec{G}' + DI'\vec{V}) d\Omega' \end{aligned}$$

with the boundary conditions $I(\vec{n}, 0) = I^{(0)} \delta(\vec{n} - \vec{n}_0)$,

$\vec{G}(\vec{n}, 0) = I^{(0)} \xi \delta(\vec{n} - \vec{n}_0)$ with $\cos \theta > 0$ and

$I(\vec{n}, t) = \vec{G}(\vec{n}, t) = 0$ with $\cos \theta < 0$ is first set up.

In the following, the author confines his attention to the vertically incident primary beam and derives, in accordance with boundary conditions, two systems of equations I and II. These systems are solved one after the other. A solution is obtained, which is applicable to small as well as to large

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The Multiple Scattering of Polarized Electrons

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scattering angles. It is obtained in form of a development in series in spherical functions and spherical vectors. A comparison of results with those obtained by Mühlischlegel and Koppe in the case of small angles leads to identical expressions. The author finally thanks A. Z. Dolginov for valuable advice and V. V. Batygin for discussions. There are 14 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskii institut
(Leningrad Polytechnic Institute)

SUBMITTED: June 26, 1958

Card 3/3

40630
S/056/62/043/003/044/063
B108/B102

24.4500
AUTHOR: Toptygin, I. N.

TITLE: Annihilation of positrons in an ionized gas

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 3(9), 1962, 1031 - 1036

TEXT: The positron lifetime in ionized hydrogen is calculated and the role of Coulomb correlation in positron annihilation is studied. The differential probability of transition into a final state of a hydrogen plasma reached after two-quantum annihilation of positrons is

$$dW(\omega k) = \frac{Vh}{2\pi^2} \left(\frac{e^4}{m^2 c^3} \right) e^{(\mu_e + \mu_p)\beta - \beta \hbar \omega} \sum_n |\psi_n(0)|^2 \delta(\hbar \omega - E_k - E_n) d\omega dk. \quad (17)$$

This result was obtained on the assumption that the positrons are in thermal equilibrium with the plasma. The shape of the annihilation lines can be found by integrating over k in Eq. (17). Knowing the chemical potentials of electron and positron one can calculate the positron lifetime $\tau = 1/W$. Assuming that the concentration $n_p \ll n_e$, and that the degree of

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Annihilation of positrons in...

S/056/62/043/003/044/063
B108/B102

ionization is high,

$$W = \frac{r_0^3 c}{a^3} n_{pe} V e^{-\beta I} \left\{ \sum_{n=1}^{\infty} \frac{1}{n^3} e^{\beta I/n^3} + \int_0^{\infty} \frac{e^{-\beta I x^3} x dx}{1 - e^{-\beta I x^3}} \right\}. \quad (27).$$

Here, $r_0 = e^2/mc^2$, $a = 2\hbar^2/me^2$, $n_{pe} \approx n_p^0 n_e^0 (4\pi\hbar^2/m)^{3/2} e^{\beta I}$. n_p^0 and n_e^0 are the positron and electron concentrations at full ionization. $I = me^4/4\hbar^2$ is the ionization potential of a positronium atom. β is a Dirac matrix. At temperatures $\beta^{-1} > I$ the annihilation probability will increase owing to the effect of the positive ions. There are 3 figures.

ASSOCIATION: Leningradskiy politekhnicheskii institut (Leningrad Polytechnic Institute)

SUBMITTED: April 5, 1962

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ACCESSION NR: AP4028952

S/0057/64/034/004/0645/0653

AUTHOR: Toptygin, I.N.

TITLE: On the theory of positron annihilation in an ionized gas

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.4, 1964, 645-653

TOPIC TAGS: positron, plasma, positron plasma interaction, positron plasma diagnostics, positronium, positronium ionization, positronium excitation, positronium production

ABSTRACT: The cross sections for the various processes involved in the interaction of positrons with a hydrogen plasma are either calculated or collected from the literature, and the probabilities of these processes and their reciprocals in the plasma are calculated as functions of temperature and density. These data are required for the application of positron annihilation as a tool in plasma diagnostics, particularly at low temperatures and/or densities where there is not sufficient time for thermal equilibrium to be established between positronium and the plasma. The direct processes discussed are ionization of positronium by electron or proton impact, induced and spontaneous transitions between discrete states of positronium,

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ACCESSION NR: AP4023952

photoproduction of positronium, and positronium production by charge exchange collisions between positrons and hydrogen atoms. Except for the charge exchange cross section, which is taken from the work of H.S.W.Massey and C.B.O.Mohr (Proc.Phys.Soc. A67,695,1954), the cross sections are calculated from corresponding cross sections for hydrogen by means of relations based on the Born approximation. The use of the Born approximation at energies at which it is not entirely valid is justified by the fact that the errors of the Born approximation are not usually so great for inelastic as for elastic processes, and that the influence of the Boltzmann factor is frequently predominant in the contemplated application, making precise knowledge of the cross sections unnecessary. The fate of positrons in plasma of various temperatures and densities is discussed. If the temperature is between 0.5 and 1.0 eV and pressure is 0.1 atm, the lifetime of positronium is short compared with the reciprocal of its rate of formation, and the positron lifetime is determined by the rate of positronium production. The angular distribution of the annihilation photon pairs is calculated. This involves the energy dependence of the charge exchange cross section, about which information can therefore be obtained from investigation of positron annihilation in plasmas. If the plasma temperature is equal to the ionization energy of positronium (6.8 eV) and the electron density exceeds $3 \times 10^{16} \text{ cm}^{-3}$, positronium is essentially in thermal equilibrium with the plasma. At the same

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ACCESSION NR: AP4028952

temperature, but with a density of 10^{15} cm^{-3} , the excited states of positronium are in thermal equilibrium, but the annihilation rate from the ground state is equal to the rate of its formation. "The author is grateful to V.V.Batygin and A.Z.Dolginov for discussing the work." Orig.art.has: 28 formulas, 2 figures and 1 table.

ASSOCIATION: Leningradskiy politekhnicheskii institut im. M.I.Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 24May63

DATE ACQ: 28Apr64

ENCL: 00

SUB CODE: PH

NR REF SOV: 007

OTHER: 007

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Card:

TOPTYGIN, I.N.

Kinetic equation for multiple scattering of Dirac particles. Izv.
vys. ucheb. zav.; fiz. no.4:142-148 '63. (MIRA 16:9)

1. Leningradskiy politekhnicheskii institut imeni Kalinina.
(Graphic methods) (Scattering (Physics))

ACC NR: AP7003218

SOURCE CODE: UR/0056/66/051/006/1771/1783

AUTHOR: Dolginov, A. Z.; Toptygin, I. N.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences, SSSR (Fiziko-
tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Multiple scattering of particles in a magnetic field with random inhomo-
geneities

SOURCE: Zh eksper i teor fiz, v. 51, no. 6, 1966, 1771-1783

TOPIC TAGS: random magnetic field, particle scattering, distribution function, plas-
ma charged particle, kinetic equation, correlation statistics, physical diffusion

ABSTRACT: In view of the fact that in many earlier investigations sight was lost of
the numerous singularities that arise in the distribution function of particles in-
teracting with random magnetic fields trapped in a moving plasma, the authors derive
a kinetic equation for the motion of charged particles in a magnetic field that
fluctuates in space and in time, and whose fluctuations can at the same time move in
space in regular fashion with some specified velocity. The motion of the particles
is described by a distribution function satisfying Boltzmann's equation. This equa-
tion is averaged over the random magnetic field and an equation is derived for the
averaged distribution function under the assumption that the particle displacement
by the random field is small compared with the correlation length. The derived
kinetic equation is solved for certain simple cases of zero translational velocity

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ACC NR: AP7003218

and no constant magnetic field, when the particle-momentum changes are small, for a statistically isotropic random field, and for scattering in a static random magnetic field with spherical symmetry. The transition to the diffusion approximation is considered and the equation for diffusion of the particles in a medium with moving magnetic-field inhomogeneities is derived. Orig. art. has: 2 figures and 64 formulas.

SUB CODE: 20/ SUBM DATE: 12May66/ ORIG REF: 004/ OTH REF: 002

Card 2/2

MOLODTSOV, I.G.; TOPTYGIN, L.A.

Mechanization and automation in the by-product coke industry.
(MIRA 15:3)
Koks i khim. no.3:51-56 '62.

1. Gosudarstvennyy vsesoyuznyy institut po proyektirovaniyu
predpriyatiy koksokhimicheskoy promyshlennosti.
(Coke industry--By-products) (Automatic control)

TUMARKIN, L.A.; TOPTYGIN, L.A.

Basic trends of the automation of chemical sections in by-product coking plants. Zhur. VKHO 5 no.1:61-67 '60. (MIRA 14:4)

(Coke industry--Automation)

TOPTYGIN, L.A.
USSR/Chemical Technology - Chemical Products and Their
Application. Treatment of Natural Gases and Petroleum.
Motor and Jet Fuels. Lubricants.

I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2597

Author : Toptygin, L.A.

Inst :

Title : Extending the Life of Power Unit Oil

Orig Pub : Koks i khimiya, 1957, No 4, 56-58

Abstract : The causes of deterioration of the quality of transformer and turbine oil are high temperature, which promotes oxidation, and moisture intake. At the Bagleyskiy coking plant were in operation, during 1955-1956, stationary adsorbers of ORGRES design, in which the adsorbent was activated Al_2O_3 used in an amount of 2.2-3% of the weight of the oil in the turbine assembly; the necessary output of the adsorber (20-40 liter/hour) was set by means of a limiting diaphragm. Thermo-siphon filters were also provided at

Card

Card 1/2

BALANDIN, A.A.; KUKINA, A.I.; TOPTYGINA, E.V.

Hydrogenation of aldehydes and ketones in the presence of iron catalysts. Izv.AN SSSR. Otd.khim.nauk no.11:1925-1932 N '62.

(MIRA 15:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Aldehydes) (Ketones) (Hydrogenation)
(Iron catalysts)

MOROZOV, I.S.; TOPTYGINA, G.M.; LIPATOVA, N.P.

Compounds formed by titanium trichloride with alkali metal
chlorides and ammonia. Zhur.neorg.khim. 6 no.11:2528-2535 '61.
(MIRA 14:10)

(Titanium chloride) (Alkali metal chlorides) (Ammonia)

MOROZOV, I.S.; TOPTYGINA, G.M.; LIPATOVA, N.P.

Thermographic and roentgenographic examination of compounds formed
by titanium trichloride with alkali metal chlorides and ammonia.
Zhur.neorg.khim. 6 no.11:2536-2544 '61. (MIRA 14:10)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.
(Titanium chloride) (Alkali metal chlorides) (Ammonia)

TOPTYGINA, G.M.; MOROZOV, I.S.

Roentgenographic examination of tetravalent titanium chlorohydroxo
compounds. Zhur.neorg.khim. 6 no.6:1479-1480 Je '61. (MIRA 14:11)

(Titanium compounds)

TOPTYGINA, G.M.

Determination of water in compounds by use of the hydride method.
Zhur.anal.khim. 16 no.16:201-204 Mr-Áp '61. (MIRA 14:5)

1. Kurnakov Institute of General and Inorganic Chemistry, Academy
of Sciences U.S.S.R., Moscow.
(Hydrates)
(Hydrides)

TOPTYGINA, G.M.; MOROZOV, I.S.

Study of the system $\text{TiCl}_4\text{-HCl-H}_2\text{O}$ at 0° . Zhur. neorg. khim.
6 no.7:1685-1692 J1 '61. (MIRA 14:7)
(Titanium chloride) (Hydrochloric acid)

S/078/61/006/011/007/013
B101/B147

7

AUTHORS: Morozov, I. S., Toptygina, G. M., Lipatova, N. P.

TITLE: Investigation of compounds formed by titanium trichloride with chlorides of alkali metals and ammonium chloride

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 11, 1961, 2528-2535

TEXT: A special problem of producing titanium metal from chloride melts by electrolysis is studied. Conditions under which compounds of $TiCl_3$ with $MeCl$ ($Me = Cs, Rb, K, Na, NH_4$) form, the composition of these compounds, and their solubility in HCl are examined. These compounds which formed in aqueous solution were compared with those forming in salt melts. In the systems $TiCl_3 - MeCl - H_2O$ saturated with $TiCl_3$ and $MeCl$ at $0^\circ C$, no interaction could be determined visually. When saturating the solutions with HCl gas, light-green precipitations deposited which were analytically identified as pentachloro-aquotitanates ($Cs_2TiCl_5H_2O$, $Rb_2TiCl_5H_2O$, $(NH_4)_2TiCl_5H_2O$, $K_2TiCl_5H_2O$). They have a high hygroscopicity

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Investigation of compounds formed by...

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and are attacked by O_2 . The potassium compound immediately decomposes in the air while the sodium compound does not form. Birefringence is characteristic of the Cs-, Rb-, and NH_4 compounds:

Compound	N_1	N_2
$Cs_2TiCl_5H_2O$	1.678 ± 0.002	1.645 ± 0.002
$Rb_2TiCl_5H_2O$	1.682 ± 0.001	1.638 ± 0.003
$(NH_4)_2TiCl_5H_2O$	1.694 ± 0.002	1.664 ± 0.002

✓

Solubility of pentachloro-aquotitanates (% of $TiCl_3$) for $\sim 44\%$ HCl is 0.35 for the Cs compound, 0.26 for the Rb compound, 0.67 for the ammonium compound, and 1.50 for the K compound. With decreasing HCl concentration, solubility of pentachloro-aquotitanates increases with simultaneous decomposition. In the solid phase, alkali chlorides and (for the Cs compound) $TiCl_3 \cdot 6H_2O$ occur besides the complex compound. In dilute HCl, only the mixtures of alkali- and titanium chlorides precipitate. Thermo-Card 2/3

Investigation of compounds formed by...

S/078/61/006/011/007/013
B101/B147

graphic and X-ray analyses proved that H_2O of pentachloro-aquatitanates is inside the coordination sphere of the complex. On heating, water is separated. Temperatures: $270^{\circ}C$ for the Cs compound; $212^{\circ}C$ for the Rb compound; $116^{\circ}C$ for the NH_4 compound, and $112^{\circ}C$ for the K compound. In hydrochloric solution, titanium has the coordination number 6. The compounds found in anhydrous systems by other researchers do not form under the conditions described. A paper by M. V. Kamenetskiy (Tsvetnyye metally, 2, 39 (1958)) is mentioned. There are 4 figures, 6 tables, and 14 references: 10 Soviet and 4 non-Soviet. The reference to the English-language publication reads as follows: F. V. Schossberger. Ind. Eng. Chem., 51 (5), 157 (1959).

SUBMITTED: December 22, 1960

Card 3/3